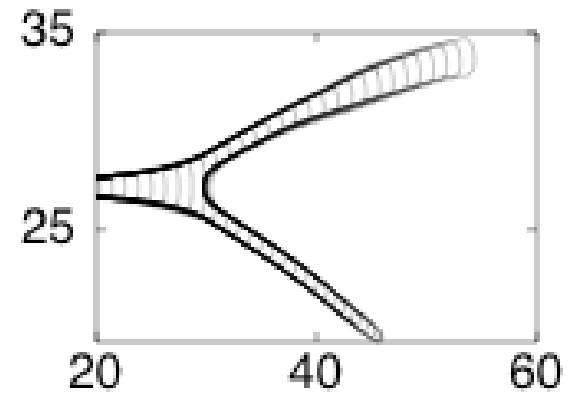


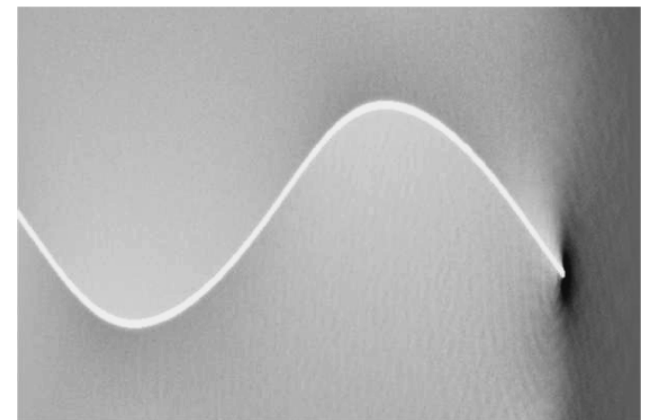
# Pattern Formation in Non-equilibrium Systems: Self-organization and Stochasticity; Herbert Levine, UCSD; DMR0101793

## *Phase field Approach to Fracture with Biaxial strain - first-ever demonstration of a transition to an oscillating crack PRL Sept. 04*

- *Experiments revealed that cracks oscillate when subjected to biaxial forcing*
- *No previous model had been able to reproduce this finding*
- *We have succeeded in a new approach which introduces a new field which tracks where the material breaks - reproduces many generic features of dynamic fracture and is computationally tractable*



uniaxial instability



biaxial oscillations